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|-----------------------|-------------|----------------------|---------------------|------------------|
| APPLICATION NO.       | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/576,523            | 04/20/2006  | Peter Geskes         | 016906-0506         | 3618             |
| 22428                 | 7590        | 08/18/2010           | EXAMINER            |                  |
| FOLEY AND LARDNER LLP |             |                      | FLANIGAN, ALLEN J   |                  |
| SUITE 500             |             |                      | ART UNIT            | PAPER NUMBER     |
| 3000 K STREET NW      |             |                      |                     | 3744             |
| WASHINGTON, DC 20007  |             |                      | MAIL DATE           | DELIVERY MODE    |
|                       |             |                      | 08/18/2010          | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |
|------------------------------|------------------------|---------------------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|                              | 10/576,523             | GESKES ET AL.       |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |
|                              | Allen J. Flanigan      | 3744                |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(e). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

- 1) Responsive to communication(s) filed on 01 June 2010.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

- 4) Claim(s) 1 and 3-20 is/are pending in the application.
  - 4a) Of the above claim(s) 4, 5, 8, 11 and 17 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1, 3, 6, 7, 9, 10, 12-16, and 18-20 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

Claims 4, 5, 8, 11, and 17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/16/2009.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “tube surface . . . structured so as to generate turbulence” of claim 9 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Applicant has submitted a substitute Fig. 1 but the only amendment made to the drawing is the addition of another reference number (3'). No changes have been made to illustrate the provision of a tube surface structured so as to generate turbulence. An enlarged, detailed illustration comparable to those shown in Figs. 3 and 4 showing specific structures of the corrugated fins is required to clearly illustrate the claimed subject matter.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3, 6, 7, 10, 12-16, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Southam.

Please see the comments made in regard to the above rejection in the previous Office action. The incorporation of the subject matter of claim 2 into claim 1 is not believed to distinguish over Southam. Applicant's comments indicate that they do not consider Southam to teach that corrugated structures

38, 39 that are provided between adjacent tubes and the housing are "sheet metal". While not specifically described as such in the specification of Southam, it is believed that such a feature is inherently disclosed. Southam discloses an compact heat exchanger design meant to be an improvement on conventional heat exchanger designs including two explicitly cited patents, one being US #2,812,165 to Hammond. Hammond shows corrugated sheet elements similar to those employed in Southam's design and specifically mentions that the corrugated sheets 20 are formed of sheet metal (see lines 51-59 of column 1 of Hammond). Southam undoubtedly omitted explicit mention of forming the corrugated sheets out of metal due to the utter conventionality of forming heat exchanger components of metals such as steel, copper, aluminum, and other thermally conductive materials. Southam also refers to machining tolerances regarding the components of these conventional heat exchanger designs, and specifically mentions welding as a means of attaching header plates 27 to the components of the core, further supporting the implicit disclosure of using conventional metal materials to construct the components of the disclosed heat exchanger design.

Regarding newly added claims 19 and 20, applicant is referred to the discussion of claim 10 in the previous Office action. As noted, the applicants include in their categorization of "inhomogeneous structure" the tapered end corrugated structure shown in Fig. 5b (bottom of page 8 of the specification).

Southam essentially describes just such a structure in lines 54-57 of column 4.

Claims 1, 3, 6, 7, 10, 12-16, and 18-20 are rejected under 35 U.S.C. 103(a) as being obvious over Southam.

Assuming *arguendo* that Southam cannot be said to implicitly teach the use of metal to form corrugated elements in their heat exchanger design, the use of such a conventional material would have been obvious. The Examiner hereby takes Official Notice of the notoriously well known nature of using metallic material to form components in a wide variety of heat exchanger designs, including plate and corrugated fin core heat exchangers of the type shown in Southam. See ***In re Malcolm, 54 U.S.P.Q. 235.***

Regarding claim 18, the Examiner additionally takes Official Notice of the notoriously well known nature of using soldering to assemble metal components of heat exchangers. See ***In re Malcolm, supra.***

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Southam in view of Zifferer.

Please see the comments made in regard to the above rejection in the previous Office action.

Applicant's arguments filed 6/1/2010 have been fully considered but they are not persuasive.

Aside from the comments made regarding the "sheet metal structures" recited in amended claim 1 and those related to "inhomogeneous" structures in

new claim 19 that have been addressed above, no other comments are made by the applicant in regard to the patentability of the claims over the art of record.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen J. Flanigan whose telephone number is (571) 272-4910. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Allen J. Flanigan/  
Primary Examiner, Art Unit 3744